

REMARKS

Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow. Claims 1-4, 12-13, 16-19, 23-35, 40, and 66-81 have been rejected. Claims 1, 5, 10, 12-13, 29, 33, 68, 74, and 76 have been amended and Claim 4 has been cancelled without prejudice. No new matter has been added. Accordingly, Claims 1-3, 5-40, and 66-81 will be pending in the present application upon entry of this Amendment and Reply, with Claims 5-11, 14-15, 20-22, and 36-39 withdrawn from consideration.

A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented, with an appropriate defined status identifier.

Claim Objections

On page 2 of the Office Action, Claim 33 was objected to by the Examiner. Appropriate correction has been made.

Claim Rejections – 35 U.S.C. § 102

On page 2 of the Office Action, Claims 1-3, 17-19, 23-26, 28-31, 33-34, 40, 71, 73-74, and 79-81 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,514,721 to Spurrell. The Applicant respectfully traverses this rejection.

Claim 1 is in independent form and recites a “device for collecting viable gas-borne matter” comprising, in combination with other elements, a “substance” that is “configured to maintain the viable matter in a living state without promoting growth of the viable matter and comprises a hydrocolloid and at least one nutrient.”

Claim 29 is in independent form and recites a “collection device for use in sampling gas that contains viable matter” comprising, in combination with other elements, a “suspension medium for preserving viable matter in a living state without promoting growth of the viable matter” that “comprises a hydrocolloid and at least one nutrient.”

Claim 74 is in independent form and recites a “collection device for gas-borne viable matter” comprising, in combination with other elements, a “substance provided on the plate and comprising a hydrocolloid material and at least one nutrient for capturing viable matter and maintaining the viable matter in a living state without promoting growth.”

Spurrell does not identically disclose a “substance” or “suspension medium” comprising, among other elements, “at least one nutrient” as recited in independent Claims 1, 29, and 74.

In contrast, Spurrell states that the “growth/inhibitor media comprises a solid, liquid, gel, or mixture thereof and is selected from the group consisting of distilled water, pure water, and agar.” Spurrell does not, however, disclose that the “growth/inhibitor media” includes at least one nutrient.

Because at least one limitation of each of the rejected independent claims is not identically disclosed by Spurrell, the Applicants respectfully request withdrawal of the rejection of Claims 1-3, 17-19, 23-26, 28-31, 33-34, 40, 71, 73-74, and 79-81 under 35 U.S.C. § 102(b).

Claim Rejections – 35 U.S.C. § 103

1. Claims 4 and 12-13

On page 4 of the Office Action, the Examiner rejected Claims 4 and 12-13 as being unpatentable over Spurrell in view of U.S. Patent No. 4,038,057 to Roth under 35 U.S.C. § 103(a). The Applicant respectfully traverses this rejection.

It should be noted at the outset that independent Claim 1 has been amended to include the limitation of dependent Claim 4, and Claim 4 has been cancelled without prejudice. Claims 12 and 13 have been amended to depend from Claim 1. For purposes of this rejection, it will be assumed that the Examiner would apply the same references to independent Claim 1. For the reasons described below, it is submitted that Claims 1, 12, and 13 are not unpatentable over the combination of Spurrell and Roth.

The Examiner acknowledged that “Spurrell is silent as to a hydrocolloid and a nutrient.” However, the Examiner stated that Roth “discloses a particulate air sampler having a collection plate consisting of agar and nutrients.” The Examiner concluded that “it would have been obvious to one skilled in the art to provide a nutrient to the media of the Spurrell media (23) in view of the known practice as disclosed in Roth.”

The Applicant disagrees for at least two reasons.

First, there is no teaching or suggestion provided in either of the cited references that would motivate one of ordinary skill in the art to make the combination described by the Examiner. For example, there is no indication as to how the percentages of constituents in the “growth/inhibitor media” disclosed in Spurrell would have to be modified in order to accommodate the “nutrient” of Roth. Nor is there any indication of why such a combination would be desirable or beneficial. The Examiner appears to have taken distinct elements from otherwise unrelated references using the Applicant’s own disclosure as a roadmap. Such hindsight reconstruction is improper and cannot form the basis for a rejection under 35 U.S.C. § 103.

Second, even if the Examiner had properly established that there would have been a motivation to combine the references in the manner suggested, one still would not arrive at the subject matter recited in independent Claim 1 in making such a combination.

Claim 1 is in independent form and recites a “device for collecting viable gas-borne matter” comprising, in combination with other elements, a “substance” that is “configured to maintain the viable matter in a living state without promoting growth of the viable matter and comprises a hydrocolloid and at least one nutrient.”

Paragraph [0038] of the present Specification describes certain advantages that may be obtained in using a substance that does not promote growth:

[0038] Substance 54 does not promote development or maturation (e.g., growth) of viable matter captured therein according to an exemplary embodiment. For example, substance 54 does not include nutrients in an amount adequate or sufficient to encourage growth of the viable matter. In this

manner, viable matter captured by substance 54 may be transported to an appropriate growth medium (e.g., an agar medium) for culturing. One advantageous feature of such an arrangement is that captured viable matter may be introduced into a growth medium in essentially the as-captured form, so that one may observe essentially all stages of development subsequent to capture.

In contrast to the subject matter recited in Claim 1, Roth expressly notes that the “nutrients” described therein are intended to promote growth (see column 3, line 67 to column 4, line 2, with underlining added for emphasis):

An agar layer 52 is provided in Petri dish 50 that has a nutrient material mixed therein to incubate viable organisms on the nutrient mixture.

To “incubate” is to encourage growth. For example, The American Heritage Stedman’s Medical Dictionary (R), Copyright 2002, 2001, 1995 by Houghton Mifflin Company includes the following definitions of “incubate” (with underlining added for emphasis):

1. To maintain eggs, organisms, or living tissue at optimal environmental conditions for growth and development.
2. To maintain a chemical or biochemical system under specific conditions in order to promote a particular reaction.

Thus, it would appear that if the “growth/inhibitor media” of Spurrell was modified in the manner suggested by the Examiner to include the “nutrient” of Roth, the resulting mixture would promote growth of the sample. Accordingly, it appears that Roth actually teaches away from the claimed invention recited in Claim 1, which requires that the “substance” is “configured to maintain the viable matter in a living state without promoting growth of the viable matter.

Accordingly, the “device for collecting viable gas-borne matter” recited in independent Claim 1, considered as a whole, would not have been obvious in view of Spurrell, alone or in any proper combination with Roth under 35 U.S.C. § 103(a).

Because at least one limitation of each of independent Claim 1 is not taught or suggested by the combination of references cited by the Examiner, reconsideration and allowance of Claims 1, 12, and 13 over the potential combination of Spurrell and Roth is therefore respectfully requested.

2. Claims 16, 66-68 and 75

On pages 4 and 7 of the Office Action, the Examiner rejected Claims 16, 66-68, and 75 as being unpatentable over Spurrell in view of Roth and U.S. Patent Application Publication No. 2004/0058428 to Perlman et al. under 35 U.S.C. § 103(a). The Applicant respectfully traverses this rejection.

Claims 16 and 66-68 depend from independent Claim 1. Claim 75 depends from independent Claim 74.

There is no teaching or suggestion provided in any of the cited references that would motivate one of ordinary skill in the art to make the combination described by the Examiner. For example, there is no indication as to how the Spurrell “growth/inhibitor media” or the “agar layer” of Roth would have to be modified to accommodate the materials described in Perlman et al. Nor is there any indication of why such a combination would be desirable or beneficial. The Examiner appears to have taken distinct elements from otherwise unrelated references using the Applicant’s own disclosure as a roadmap. Such hindsight reconstruction is improper and cannot form the basis for a rejection under 35 U.S.C. § 103.

Second, even if the Examiner had properly established that there would have been a motivation to combine the references in the manner suggested, one still would not arrive at the subject matter recited in independent Claims 1 or 74 in making such a combination.

Claim 1 recites a “substance” that is “configured to maintain the viable matter in a living state without promoting growth of the viable matter and comprises a hydrocolloid and at least one nutrient.”

Claim 74 recites a “substance provided on the plate and comprising a hydrocolloid material and at least one nutrient for capturing viable matter and maintaining the viable matter in a living state without promoting growth.”

As described above, neither Spurrell nor Roth, taken alone or in proper combination, teach or suggest a substance that includes at least one nutrient and which maintains viable matter in a living state without promoting growth. Perlman et al. also does not teach or suggest such an element, either taken alone or in combination with Spurrell and/or Roth.

Perlman et al. relates to a “Selective Growth Medium for Bacillus Anthracis” and in the Abstract states that the “medium of various embodiments includes a rich nutrient medium capable of supporting the growth of B. anthracis and the following constituents...” (underlining added for emphasis).

Thus, the “medium” of Perlman et al. is configured to promote growth, as opposed to “maintain[ing] the viable matter in a living state without promoting growth of the viable matter” as recited in Claims 1 and 74. Perlman et al. thus appears to teach away from the subject matter recited in Claims 1 and 74.

Accordingly, the “device for collecting viable gas-borne matter” recited in independent Claim 1, and the “collection device for gas-borne viable matter” recited in independent Claim 74, considered as a whole, would not have been obvious in view of Spurrell, alone or in any proper combination with Roth and Perlman et al. under 35 U.S.C. § 103(a).

Because at least one limitation of independent Claims 1 and 74 is not taught or suggested by the combination of references cited by the Examiner, reconsideration and withdrawal of the rejection of Claims 16, 66-68, and 75 is therefore respectfully requested.

3. Claims 70 and 78

On pages 5 and 7 of the Office Action, the Examiner rejected Claims 70 and 78 as being unpatentable over Spurrell in view of Roth, Perlman et al., and U.S. Patent Application

Publication No. 2003/0068777 to Nakano et al. under 35 U.S.C. § 103(a). The Applicant respectfully traverses this rejection.

As described above, the Examiner has not satisfied the burden of showing that one of ordinary skill in the art would have been motivated to make the combination of Spurrell, Roth, and Perlman et al.

The Applicant also submits that the Examiner has not satisfied the burden of showing that one of ordinary skill in the art would have been motivated to combine the teachings of Nakano et al. with any of the other cited references.

Nakano et al. relates to a “Method for Detecting Microorganisms and Detection Kit” and discloses, in the “Background of the Invention” section, that the “present invention relates to a method and a kit for detecting microorganisms in food and carrying out a test such as a drug susceptibility test for the purpose of selecting an optimal drug for treating a patient infected with a microorganism” (emphasis added). Thus, Nakano et al. appears to be completely unrelated to air sampling.

It is unclear why one of ordinary skill in the art would select a single element (“chloramphenicol”) from Nakano et al. without any apparent motivation to do so. There are many chemicals described in this reference, and it is unclear why this one was selected by itself without any regard for the fact that it is used in a combination in Nakano et al. The Examiner has not shown why culture mediums used in the process of “detecting microorganisms in food” would be compatible with those used for air sampling, how one would have to modify the other substances described in Spurrell, Roth, and Perlman et al. to include chloramphenicol (e.g., at what percentages should they be added), and the like. Simply put, the Examiner appears to have taken one distinct element from an otherwise unrelated reference using the Applicant’s own disclosure as a roadmap.

Even if the Examiner had properly established that there would have been a motivation to combine the references in the manner suggested, one still would not arrive at the subject matter recited in independent Claims 1 and 74 in making such a combination.

Claim 70 depends from independent Claim 1, and Claim 78 depends from independent Claim 74. Claim 1 recites a “substance” that is “configured to maintain the viable matter in a living state without promoting growth of the viable matter and comprises a hydrocolloid and at least one nutrient” and Claim 74 recites a “substance provided on the plate and comprising a hydrocolloid material and at least one nutrient for capturing viable matter and maintaining the viable matter in a living state without promoting growth.”

It has previously been established by Applicant that the combination of Spurrell, Roth, and Perlman et al. does not teach or suggest a substance that is configured to maintain viable matter in a living state without promoting growth of the viable matter. The addition of Nakano et al. to the combination does not change this fact.

For example, while Nakano et al. makes a passing reference to the “where the object is to detect only a yeast-like fungus or a filamenious fungus, addition of an antibiotic such as chloramphenicol in order to suppress the growth of bacteria” (emphasis added). This is not the same as suggesting a combination of chemicals such as that recited in Claim 1 which maintains viable matter in a living state without promoting growth of the viable matter. The Applicant has come up with a formulation that reaches this desirable result – a result that is not taught or suggested by any of the cited references, either taken alone or in proper combination.

It is improper to randomly select a material from one reference that has a certain property and suggest – without any motivation to do so – that merely adding this material to a combination disclosed in an otherwise unrelated reference would produce the claimed combination. There is no evidence provided by any of the cited references that such a result would be obtained, nor is there any enabling description in any of the references as to how such a combination would be prepared.

Because at least one limitation of independent Claims 1 and 74 is not taught or suggested by the combination of references cited by the Examiner, reconsideration and withdrawal of the rejection of Claims 70 and 78 under 35 U.S.C. § 103(a) is respectfully requested.

4. Claims 69 and 77

On pages 5 and 8 of the Office Action, the Examiner rejected Claims 69 and 77 as being unpatentable over Spurrell in view of Roth and U.S. Patent Application Publication No. 2003/0207304 to Black et al. under 35 U.S.C. § 103(a). The Applicant respectfully traverses this rejection.

As described above, the Examiner has not satisfied the burden of showing that one of ordinary skill in the art would have been motivated to make the combination of Spurrell, Roth, and Perlman et al.

The Applicant also submits that the Examiner has not satisfied the burden of showing that one of ordinary skill in the art would have been motivated to combine the teachings of Black et al. with any of the other cited references.

Black et al. relates to “Glycerol-Doped Aerogel Coatings as Biological Capture Media” and discloses, in the first paragraph of the “Detailed Description of the Invention” section that the “invention improves upon the prior art by combining osmoprotectants and polyols with silicate materials to form media for efficient collection of biological materials.”

It is unclear from this statement (or from any other language in Black et al.) why one of ordinary skill in the art would make the combination suggested by the Examiner. The Examiner notes that Black et al. discloses a “humectant in the form of glycerol which is a polyol.” How this material could be combined with the materials in the other cited reference is not specified in any of the references or in the Examiner’s comments.

Again, it appears that the Examiner has taken one element from an otherwise unrelated reference in an attempt to make a combination using the Applicant’s own disclosure as a roadmap.

Even if the Examiner had properly established that there would have been a motivation to combine the references in the manner suggested, one still would not arrive at the subject matter recited in independent Claims 1 and 74 in making such a combination.

Claim 69 depends from independent Claim 1, and Claim 77 depends from independent Claim 74. Claim 1 recites a “substance” that is “configured to maintain the viable matter in a living state without promoting growth of the viable matter and comprises a hydrocolloid and at least one nutrient” and Claim 74 recites a “substance provided on the plate and comprising a hydrocolloid material and at least one nutrient for capturing viable matter and maintaining the viable matter in a living state without promoting growth.”

It has previously been established by Applicant that the combination of Spurrell and Roth does not teach or suggest a substance that is configured to maintain viable matter in a living state without promoting growth of the viable matter. The addition of Black et al. to the combination does not change this fact.

While Black et al. does indicate that “glycerol is a commonly used osmoprotectant for the storage and collection of bacterial cultures,” it does not indicate that adding this to a substance such as those disclosed in Spurrell or Roth would have the effect of maintaining viable matter in a living state without promoting growth of the viable matter. The Applicant has come up with a formulation that reaches this desirable result – a result that is not taught or suggested by any of the cited references, either taken alone or in proper combination.

Because at least one limitation of independent Claims 1 and 74 is not taught or suggested by the combination of references cited by the Examiner, the Applicant respectfully requests reconsideration and withdrawal of the rejection of Claims 69 and 77 under 35 U.S.C. § 103(a).

5. Claims 1-3, 17-19, 25-35, 40, 71-74, 79, 79, and 81

On page 6 of the Office Action, the Examiner rejected Claims 1-3, 17-19, 25-35, 40, 71-74, 76, 79, and 81 as being unpatentable over U.S. Patent Application Publication No. 2002/0066321 to Lagraff et al. in view of U.S. Patent No. 6,406,906 to Herbig et al. under 35 U.S.C. § 103(a). The Applicant respectfully traverses this rejection.

The Examiner acknowledged that “[t]he reference [Lagraff et al.] is silent as to a substance which maintains the viability of the biological material without promoting growth.” However, the Examiner stated that Herbig et al. “discloses a membrane for collecting

biological viable material which includes an agar (polyvinyl alcohol or starch) at 4.6-5.6% and anti-bacterial compounds and humectants (inositol, betaine, lysine) for maintaining the viability.” The Examiner concluded that “it would have been obvious to one skilled in the art to provide the membrane of Herbig et al. in place of the adhesive layer in Lagraff et al. in view of the known advantage of maintaining the viability of the biological material as taught in Herbig et al.

The Applicant disagrees for at least two reasons.

First, there is no teaching or suggestion provided in either of the cited references that would motivate one of ordinary skill in the art to make the combination described by the Examiner. Lagraff et al. discloses the use of a “microscope slide 16.” There is no indication in either of the cited references as to how the device 10 described in Lagraff et al. could accommodate a membrane filter such as that disclosed in Herbig et al. A membrane filter has a structure entirely dissimilar to a microscope slide. The Examiner appears to have taken one element from Herbig et al. and attempted to combine it with the device in Lagraff et al., without any teaching that such a combination would even be possible. Such reasoning is not a proper basis for a rejection under 35 U.S.C. § 103.

Second, even if the Examiner had properly established that there would have been a motivation to combine the references in the manner suggested, one still would not arrive at the subject matter recited in the independent claims 1.

Claim 1 is in independent form and recites a “device for collecting viable gas-borne matter” comprising, in combination with other elements, a “substance” that is “configured to maintain the viable matter in a living state without promoting growth of the viable matter and comprises a hydrocolloid and at least one nutrient.”

Claim 29 is in independent form and recites a “collection device for use in sampling gas that contains viable matter” comprising, in combination with other elements, a “suspension medium for preserving viable matter in a living state without promoting growth of the viable matter” that “comprises a hydrocolloid and at least one nutrient.”

Claim 74 is in independent form and recites a “collection device for gas-borne viable matter” comprising, in combination with other elements, a “substance provided on the plate and comprising a hydrocolloid material and at least one nutrient for capturing viable matter and maintaining the viable matter in a living state without promoting growth.”

Thus, each of the independent claims recites a substance or suspension medium that (1) includes nutrients and (2) maintains viable matter in a living state without promoting growth. Neither Lagraff et al. nor Herbig et al., whether taken alone or in proper combination, teach or suggest such a substance or suspension medium.

The Examiner noted on page 6 of the Office Action that “the Herbig et al. patent also discloses that it is well known to include a nutrient into the media (col. 1, lines 45-50)” and concluded that “it would have been obvious to add a nutrient into the media provided in Herbig et al. in view of the known use.”

However, a closer look at the portion of Herbig et al. relied upon for this proposition illustrates that Herbig et al. actually teaches away from the subject matter recited in independent Claims 1, 29, and 74 (with underlining added for emphasis):

When nutrients are supplied to a gelatin membrane filter for growing microorganisms, it has been suggested to add buffering materials, coloring substances chemicals capable of absorbing biologically poisonous materials and/or counteracting traces of heavy metals or even damaging gases contained in the original air sample. See DE 11 73 640 The disadvantage of this is that in spite of the ready supply of nutrients, apparently due to the added substances, substantially fewer detectable colonies propagate from the microorganisms collected on the membrane than were originally present in the contaminated medium, giving a false or inaccurate count.

Thus, the only portion of Herbig et al. cited for the inclusion of “nutrients” actually indicates that such nutrients are provided for growth of microorganisms. This is in contrast to each of the independent claims of the present application, which recite a substance or suspension medium that maintains viable matter in a living state without promoting growth.

Because at least one limitation of independent Claims 1, 29, and 74 is not taught or suggested by the combination of references cited by the Examiner, the Applicant respectfully requests reconsideration and withdrawal of the rejection of Claims 1-3, 17-19, 25-35, 40, 71-74, 76, 79, and 81 under 35 U.S.C. § 103(a).

* * *

It is submitted that each outstanding objection and rejection to the Application has been overcome, and that the Application is in a condition for allowance. The Applicant requests consideration and allowance of all pending claims, including those previously withdrawn from consideration.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 06-1447. Should no proper payment be enclosed herewith, as by a check or credit card payment form being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 06-1447. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 06-1447.

Respectfully submitted,

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By 

FOLEY & LARDNER LLP
Customer Number: 26371
Telephone: (313) 234-7150
Facsimile: (313) 234-2800

Marcus W. Sprow
Attorney for Applicant
Registration No. 48,580